REMARKS

Claims 12 to 15 are added, and therefore claims 6 to 8 and 11 to 15 are pending and being considered in the present application (since claims 9 and 10 were previously withdrawn in response to a restriction action).

In view of the following, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Claims 7 and 8 have been slightly rewritten as to the claimed subject matter. Approval and entry are respectfully requested.

With respect to paragraph five-point-one (5.1) of the Office Action, claims 6 to 8 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 4,063,237 ("Nier"), in view of UK Patent Application No. GB2317256 ("Winner"). It is respectfully submitted that the proposed combination of the Nier and Winner references does not disclose (or even suggest) all of the features of claims 6 to 8.

Claim 6 relates to a method for a motor vehicle having an adaptive distance and speed control for lane allocation of vehicles on multi-lane roads, including the feature of *carrying out the lane allocation in a model-based manner via a frequency distribution of lateral displacements of detected radar objects* by: *correlating the frequency distribution with one of (a) stored models for frequency distributions of lateral displacements, relating to lane allocation for multi-lane roads* having a defined width and *(b) characteristic lateral displacement histograms for different lanes* used by a succeeding vehicle; and *outputting a model part having a highest correlation to the frequency distribution as a lane hypothesis.*

The Nier reference does not disclose (or even suggest) the feature of *carrying out the lane allocation in a model-based manner via a frequency distribution of lateral displacements of detected radar objects*. The Nier reference merely refers to a distance measuring system "to measure the spacing between a leading and a trailing vehicle ... in a single traffic lane." (Nier, col. 2, lines 1 to 6 (emphasis added)). Also, the Nier reference indicates that "[o]nly those signals are processed in the system of the present invention which are re-radiated or reflected by a leading vehicle in the same traffic lane." (Nier, col. 5, lines 41 to 44 (emphasis added); and col. 6, lines 25 to 28). Further, the Nier reference specifically states that "[v]ehicles travelling in lanes other than those in which the measuring vehicle is located are ... not considered in the signal processing." (Nier, col. 2, lines 22 to 25; and col. 5, lines 38 to 41). In addition, the sections of the Nier reference cited by the Office Action, e.g. column 2, lines 46 to 66; and column 5, line 23 to column 6, line 41, merely refer to

measuring spacing between a leading and a trailing vehicle <u>in a single traffic lane</u>. Indeed, as quoted above, the Nier reference specifically states that it does not even process signals from laterally displaced, detected radar objects, but only processes signals from a leading vehicle in the same traffic lane. Therefore, the Nier reference does not disclose (or even suggest) the feature of *carrying out the lane allocation in a model-based manner via a frequency distribution of lateral displacements of detected radar objects*, as provided for in the context of claim 6.

In addition, the Nier reference does not disclose (or even suggest) the feature of *correlating the frequency distribution with one of (a) stored models for frequency distributions of lateral displacements, relating to lane allocation for multi-lane roads* having a defined width and *(b) characteristic lateral displacement histograms for different lanes* used by a succeeding vehicle. As more fully set forth above, the Nier reference merely measures vehicle spacing in a single traffic lane, and does not disclose a frequency distribution of lateral displacements of detected radar objects. Thus, the Nier reference also does not disclose correlating such a frequency distribution. Further, the Nier reference does not disclose stored models for frequency distributions of lateral displacements, or characteristic lateral displacement histograms. The Office Action also asserts that the Nier reference discloses this feature by referring to Table 1 of the Nier reference. (Office Action, p. 3). However, Table 1 of the Nier reference merely shows an example of possible frequencies of the two oscillators (68, 92) depending on the traffic lane, but nowhere does the Nier reference indicate correlating the frequency distribution with one of stored models, and characteristic histograms. (Nier, col. 6, lines 38 to 41; and col. 7, Table 1). Therefore, the Nier reference does not disclose (or even suggest) the feature of *correlating the frequency distribution with one of (a) stored models for frequency distributions of lateral displacements, relating to lane allocation for multi-lane roads* having a defined width and *(b) characteristic lateral displacement histograms for different lanes* used by a succeeding vehicle, as provided for in the context of claim 6.

Further, the Nier reference does not disclose (or even suggest) the feature of *outputting a model part having a highest correlation to the frequency distribution as a lane hypothesis*. The only output signal indicated by the Nier reference is a measured distance to a leading vehicle in the same traffic lane. (Nier, col. 6, lines 51 to 61). Nowhere does the Nier reference disclose outputting a model part having a highest correlation. Further, nowhere does the Nier reference disclose outputting a lane hypothesis. In fact, a lane hypothesis is

unnecessary to the Nier reference since it only measures distances in a single traffic lane. Therefore, the Nier reference does not disclose (or even suggest) the feature of *outputting a model part having a highest correlation to the frequency distribution as a lane hypothesis*, as provided for in the context of claim 6.

The Office Action further asserts the Winner reference to cure the critical deficiencies of the Nier reference. However, it is respectfully submitted that the Winner reference does not cure the critical deficiencies of the Nier reference. The Winner reference merely indicates detecting whether right-hand or left-hand traffic flow prevails in a traffic environment. (Winner, Abstract; and pp. 2 to 3). However, the Winner reference does not disclose carrying out a lane allocation, but only determines the prevailing traffic flow direction. Therefore, the Winner reference does not disclose (or even suggest) the feature of *carrying out the lane allocation in a model-based manner via a frequency distribution of lateral displacements of detected radar objects*, as provided for in the context of claim 6.

In addition, the Winner reference does not disclose correlating the frequency distribution with one of stored models for frequency distributions of lateral displacements, and characteristic lateral displacement histograms. The Winner reference merely refers to designating a center of gravity S of the bar graph, and evaluating the position of the center of gravity S with respect to a reference value. (Winner, p. 7). However, the Winner reference does not disclose correlating with stored models, or characteristic histograms. Indeed, the Winner reference does not even disclose stored models, or characteristic histograms. Therefore, the Winner reference does not disclose (or even suggest) the feature of *correlating the frequency distribution with one of (a) stored models for frequency distributions of lateral displacements, relating to lane allocation for multi-lane roads* having a defined width and *(b) characteristic lateral displacement histograms for different lanes* used by a succeeding vehicle, as provided for in the context of claim 6.

Further, the Winner reference does not disclose outputting a model part having a highest correlation as a lane hypothesis. The only output indicated by the Winner reference is a determination of the traffic flow direction. (Winner, p. 9). However, the Winner reference does not disclose outputting a model part having a highest correlation. Further, the Winner reference does not disclose outputting a lane hypothesis. Therefore, the Winner reference does not disclose (or even suggest) the feature of *outputting a model part having a highest correlation to the frequency distribution as a lane hypothesis*, as provided for in the context of claim 6.

Moreover, since the Nier reference processes signals only from a leading vehicle in the same traffic lane and specifically does not process signals from vehicles in other lanes, the Nier reference plainly teaches away from any proposed combination with the Winner reference, which specifically measures vehicles in oncoming traffic lanes in order to determine a traffic flow direction.

Therefore, the proposed combination of the Nier and Winner references does not disclose (or even suggest) the features of *carrying out the lane allocation in a model-based manner via a frequency distribution of lateral displacements of detected radar objects*; *correlating the frequency distribution with one of (a) stored models for frequency distributions of lateral displacements, relating to lane allocation for multi-lane roads* having a defined width and *(b) characteristic lateral displacement histograms for different lanes* used by a succeeding vehicle; and *outputting a model part having a highest correlation to the frequency distribution as a lane hypothesis*.

Accordingly, it is respectfully submitted that claim 6 is allowable for at least the reasons provided above.

Claim 7 includes features similar to those of claim 6. Specifically, claim 7 relates to a device, including the feature of means for *carrying out a lane allocation in a model-based manner via a frequency distribution of lateral displacements of detected radar objects*, and the feature of means for *correlating a determined frequency distribution with one of (a) stored models for frequency distributions of lateral displacements, relating to lane allocation for multi-lane roads* having a defined width and *(b) characteristic lateral displacement histograms for different lanes* used by a succeeding vehicle.

Accordingly, it is respectfully submitted that claim 7 is allowable for essentially the same reasons provided above. Claim 8 depends from claim 7 and is therefore allowable for at least the same reasons as claim 7.

With respect to paragraph five-point-two (5.2) of the Office Action, claim 11 was rejected under 35 U.S.C. § 103(a) as unpatentable over the Nier reference, in view of the Winner reference. It is respectfully submitted that the proposed combination of the Nier and Winner references does not disclose (or even suggest) all of the features of claim 11.

Claim 11 also includes features similar to those of claim 6. Specifically, claim 11 relates to a method for performing lane allocation of consecutive vehicles on a multi-lane road, including the features of *determining lateral displacements of radar sensor detected objects relative to a longitudinal vehicle axis*, in which *the lane allocation is implemented in*

a model-based manner via a frequency distribution of the lateral displacements of the radar sensor detected objects; determining a histogram of a frequency distribution of the lateral displacements; correlating the histogram to stored lane models; and detecting an instantaneously driven lane of the multi-lane roadway based on a lane model having a greatest correlation to a laterally-offset histogram.

Accordingly, it is respectfully submitted that claim 11 is allowable for essentially the same reasons as claim 6.

Withdrawal of the rejections of the claims is therefore respectfully requested.

New claims 12 to 15 do not add any new matter and are supported by the present application. Claims 12 and 13 depend from claim 11, and are therefore allowable for the same reasons as claim 11. Claims 14 and 15 depend from claim 6, and are therefore allowable for the same reasons as claim 6.

In sum, claims 6 to 8 and 11 to 15 are allowable.

CONCLUSION

In view of the foregoing, it is respectfully submitted that all of the presently pending claims are allowable. It is therefore respectfully requested that the rejections (and any objections) be withdrawn. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is respectfully requested.

Respectfully submitted,

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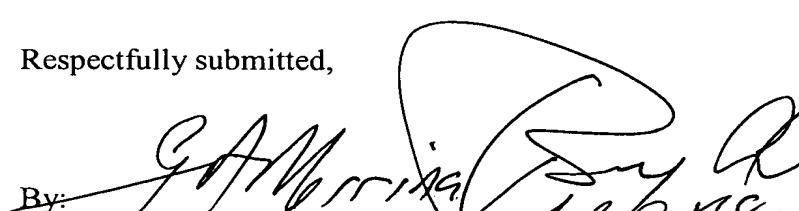
By: _____
Gerard A. Messina
(Reg. No. 35,952)

KENYON & KENYON LLP
One Broadway
New York, New York 10004
(212) 425-7200

CUSTOMER NO. 26646